

## 3<sup>rd</sup> International Conference and Exhibition on **Lasers, Optics & Photonics**

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### Optical fibre chemical sensors: Bio-medical application

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Optical techniques are considered as powerful tools for the development of chemical and biological sensors, covering a wide range of applications. Sensing techniques based upon the use of optical fibre devices to probe the optical characteristics of nanomaterials that exhibit changes in their optical properties upon exposure to targeted chemical species are particularly attractive, due to their potential high sensitivity, selectivity, the ready ability to multiplex arrays of sensors, and the prospect for remote sensing. The variety of different designs and measurement schemes that may be employed using optical fibres provides the potential to create very sensitive and selective measurement techniques that can be deployed in real environments. The use of optical fibre sensors is finding increasing acceptance across a range of industrial sectors, with interest being driven by features of the technology that offer advantages over conventional measurement approaches in niche applications. The presentation will discuss the development of fibre optic chemical sensors modified with the sensitive materials and introduce methods used for the deposition of the sensitive layers based on layer-by-layer adsorption and molecular imprinting techniques. Examples of the practical applications of the developed fibre-optic chemical sensors in bio-medical field will be provided.

### Biography

Sergiy Korposh joined University of Nottingham as a Lecturer in Electronics, Nanoscale Bioelectronics and Biophotonics in 2013. Since 2002 his research work has been devoted to the development and fabrication of chemical sensors based on a range of sensing platforms modified with functional nano-materials for various applications. He spent 8 years in Japan, as a Researcher and later as a Lecturer, where he worked mainly on the development of various facile methods for the preparation of advanced functional nano-materials. He has published over 50 peer-reviewed journal and conference papers, book contributions and holds a number of patents.

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